In the Claims:

This listing of claims will replace all prior version, and listings, of claims in the application.

1. (Currently Amended) A method for correlating an input signal~~, the input signal compliant with at least one specification selected from IEEE 802.11a WLANs and HIPERLAN/2,~~ with a sequence of alternative correlator coefficients, ~~each~~an alternative sequence associated with a specified non-negative integer *n,* the method comprising ~~the steps of~~:

digitally sampling the input signal to generate a plurality of real signal digital samples and a plurality of imaginary signal digital samples, wherein the input signal is compliant with at least one specification selected from IEEE 802.11a WLANs or HIPERLAN/2;

scaling the plurality of real signal digital samples in accordance with a selected sequence of alternative correlator coefficients to generate a plurality of scaled real signal samples;

scaling the plurality of imaginary signal digital samples in accordance with the selected sequence of alternative correlator coefficients to generate a plurality of scaled imaginary signal samples; and

combining, in accordance with a specified correlator form, a first subset of the plurality of scaled real signal samples and a second subset of the plurality of scaled imaginary signal samples to generate at least one correlator output signal.

2. (Currently Amended) The method of claim 1 wherein a correlator coefficient value of 0 for a digital sample is implemented in the scaling ~~steps~~of the plurality of imaginary samples by not using the digital sample in the combining ~~step~~of the first and second subsets.

3. (Currently Amended) The method of claim 1 wherein a -1 correlator coefficient value for a digital sample is implemented in the scaling ~~steps~~of the plurality of imaginary samples by inverting the digital sample in the combining ~~step~~of the first and second subsets.

4. (Currently Amended) The method of claim 1 wherein a correlator coefficient value of 0.5 for a digital sample is implemented in the scaling ~~steps~~of the plurality of imaginary samples by shifting the digital sample in a shift register prior to the combining ~~step~~of the first and second subsets.

5. (Currently Amended) The method of claim 1 wherein imaginary and real signal digital samples are handled in separate data streams prior to the combining ~~step~~of the first and second subsets.

6. (Currently Amended) The method of claim 1 wherein a digital sample is detected at ~~the input to~~ a storage location.

7. (Previously presented) The method of claim 1 wherein one or more of a first plurality of storage locations, having at least one real signal digital sample, and a second plurality of

storage locations, having at least one imaginary signal digital sample, are connected together as a shift register.

8. (Currently Amended) The method of claim 1 wherein the sequence of alternative correlator coefficients ~~are~~comprise members of the group consisting of {-l, -1 + 2^{-n}, -1 + 2 x 2^{-n}, -1 + 3 x 2^{-n}, ..., 1}.

9. (Currently Amended) The method of claim 1 wherein the specified correlator form ~~is~~comprises $\Xi_n = \sum_{m=1}^{16} r_{n-16+m} a_m$ wherein furthermore a_m is the scaling factor for signal sample r_{n-16+m}.

10. (Currently Amended) The method of claim 8, wherein the integer *n* is chosen from the group consisting of 0, 1, ~~and~~or 2, and *n* selects the sequence of alternative correlator coefficients.

11. (Currently Amended) The method of claim 1 wherein the sampling ~~step~~ is applied to an in-phase part of a baseband signal to generate the plurality of real signal digital samples.

12. (Currently Amended) The method of claim 1 wherein the sampling ~~step~~ is applied to a quadrature-phase part of a baseband signal to generate the plurality of imaginary signal digital samples.

13. (Currently Amended) An apparatus ~~that~~to generate~~s~~ a correlation signal from a plurality of streams of input signal samples, the apparatus comprising:

at least one digital signal processor, ~~each processor, having a plurality of inputs and at least one output, that~~to performs all of the operations from the group consisting of bitwise scaling, addition, time-wise shifting, ~~and~~or inversion on one or more of two streams from the plurality of streams and on a current value of a sample from the plurality of streams of samples; and

an adder ~~that~~to add~~s~~ ~~the~~ output~~s~~ signals of the processor ~~first~~ to generate a first correlation signal wherein ~~each~~a processor bitwise scaling operation depends on a set of correlator values that generate the first correlation signal ~~complaint~~compliant with ~~either~~ HIPERLAN/2 or IEEE 802.11a WLAN specifications.

14. (Currently Amended) The apparatus of claim 13, further comprising a shift register ~~that~~to store~~s~~ samples from a stream in the plurality of streams as finite-precision numbers.

15. (Canceled).

16. (Currently Amended) An apparatus as set forth in claim 13, wherein furthermore, the adder to receive~~s as input,~~ output~~s~~ signals from two processors, and ~~each~~the processor~~s~~ in turn, are to perform~~s~~ operations on ~~only~~ one stream.

17. (Canceled).

18. (Currently Amended) The apparatus of claim 13, wherein each processor has one output signal and a number of inputs signals selected from the group consisting of 5, 7 ~~and~~or 9.

19 -21. (Canceled).

22. (Currently Amended) A method for correlating ~~a~~ complex-valued received signal samples with a 16-point waveform, to produce a complex-valued correlation result signal ~~at about each sampling instant, wherein the complex-valued received signal samples and the 16-point waveform are compliant with IEEE 802.11a WLANs or HIPERLAN/2~~, the method comprising ~~the steps of~~:

selecting a 16-point waveform representation from the group consisting of waveform representation {-1, 0, 1, 1, 1, 0, -1, 0, -I, I, I, 0, 0}, waveform representation {0.5, 0.5i, 1, 0.5i, 1, 0.5i, -0.5, 0, 0.5i, -0.5, -I, -0.5i, -I, -0.5, 0.5i, 0}, or waveform representation {0.5, 0.5i, 1,0.5, 1, 0.5i, -0.5, 0.5-0.5i, 0.5i, -0.5, -I, -0.5i, -I, -0.5, 0.5i, 0.5 - 0.5i};

splitting a received signal into a plurality of streams;

storing, in a shift register, signal samples from at least one signal stream;

scaling, in accordance with a selected 16-point representation, at least one stored signal sample ~~samples~~ by an operation from the group consisting of inverting ~~and~~or shifting;

processing, in accordance with a selected 16-point representation, the at least one stored signal sample by adding it to at least one other signal sample from the plurality of streams to produce a first interim output signal; and

generating the complex valued correlation result signal by combining the first interim output signal with a second interim output signal, wherein the complex valued correlation result signal is compliant with IEEE 802.11a WLANs or HIPERLAN/2.

23. (Currently Amended) The method of claim 22 wherein the at least one other signal sample is scaled prior to the processing at least one signal sample~~step~~.

24. (Currently Amended) The apparatus of claim 13, wherein the set of correlator values is selected from a group of sets consisting of {-1, 0, 1, 1, 1, 0, -1, 0, i, 0, -i, -i, -i, 0, i, 0}, {-0.5, 0.5i, 1, 0.5, 1, 0.5i, -0.5, 0, 0.5i, -0.5, -i, -0.5i, -i, -0.5, 0.5i, 0},~~and~~or {-0.5, 0.5i, 1, 0.5, 1, 0.5i, -0.5, 0.5-0.5i, 0.5i, -0.5, -i, -0.5i, -i, -0.5, 0.5i, 0.5 - 0.5i}.

25. (Currently Amended) A receiver ~~compliant with the IEEE 802.11a WLANs or HIPERLAN/2 specifications,~~ comprising:

at least one digital signal processor, ~~each having a plurality of inputs and at least one output, that~~ to performs at least one operation from the group consisting of scaling, addition, shifting, or~~and~~ subtraction on one or more streams from a plurality of streams of samples and on a current value of a stream of samples from the plurality of streams of samples; and

an adder ~~that adds~~to add at least one output signal of the processor to generate a first correlation signal compliant with the IEEE 802.11a WLANs or HIPERLAN/2 specifications.